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Brooks et al.

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[54] **FLAVOR DELIVERY ARTICLES UTILIZING ELECTRICAL ENERGY**

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[58] Field of Search **131/330, 273, 194, 195; 128/202.21, 203.27, 204.23, 204.29**

[56] **References Cited**

U.S. PATENT DOCUMENTS

1,771,366	7/1930	Wyss et al.	.
1,968,509	7/1934	Tiffany	.
2,057,353	10/1936	Whittemore, Jr.	.
2,104,266	1/1938	McCormick	.
2,974,669	3/1961	Ellis	.
3,200,819	8/1965	Gilbert	.
3,889,690	6/1975	Guarnieri	.
3,918,464	11/1975	Kolodziej	.
4,133,318	1/1979	Gross et al.	.
4,141,369	2/1979	Burruss	.
4,164,230	8/1979	Pearlman	.
4,193,411	3/1980	Faris et al.	.
4,246,913	1/1981	Ogden et al.	.
4,303,083	12/1981	Burruss, Jr.	.
4,523,589	6/1985	Krauser	.
4,564,748	1/1986	Gupton	.
4,580,583	4/1986	Green, Jr.	.
4,735,217	4/1988	Gerth et al.	.
4,771,796	9/1988	Myer	.

FOREIGN PATENT DOCUMENTS

186280	7/1986	European Pat. Off.	.
2653133	5/1978	Fed. Rep. of Germany	.
2704218	8/1978	Fed. Rep. of Germany	.
3300992	7/1984	Fed. Rep. of Germany	.
2128256	10/1972	France	.
48-8231	3/1973	Japan	.
WO86/02528	5/1986	PCT Int'l Appl.	.
197946	4/1924	United Kingdom	.

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[57] **ABSTRACT**

Flavor delivery articles employ an electrical resistance heating element and an electrical power source to provide a flavored aerosol. The articles advantageously comprise a disposable portion and a reusable controller. The disposable portion normally includes a flavor substance and an air permeable resistance heating element having a surface area greater than 1 m^2/g, which usually carries an aerosol forming substance. The reusable controller normally includes a puff-actuated current actuation means, a time-based current regulating means to control the temperature of the heating element, and a battery power supply.

136 Claims, 8 Drawing Sheets